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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,222

04/22/2005

Toru Kurisu

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6744

32172

7590

08/23/2006

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EXAMINER

GLENN, KIMBERLY E

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/532,222	KURISU ET AL.	
	Examiner	Art Unit	
	Kimberly E. Glenn	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/22/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hattori et al US Patent 6,433,652.

Hattori et al disclose in figures 12A and 12B a multimode dielectric resonator apparatus used in a filter, a duplexer and a communication apparatus. The dielectric resonator comprises a TM dielectric core portion 11; and TE mode dielectric core portion 12 that protrudes from the top and bottom surface of the TM mode dielectric core portion 11. The side face at an outer periphery of the TE mode dielectric core portion is tilted such that an area of an upper surface of the TE mode dielectric core portion adjacent the bottom surface of the TM mode dielectric core portion is larger than an area of a lower surface of the TE mode dielectric core. The entire side face at the outer periphery of TE mode dielectric core portion is tilted. The area of the bottom surface of the TM mode dielectric core portion is larger than the area on the upper surface of the TE mode dielectric core portion. 4. Hattori et al disclose a filter in figures 22A and 22B and column 11, lines 61 through line 64, wherein the filter has first and last resonator stages and five dielectric resonator stages therebetween. Figure 23 disclose

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the dielectric resonator used in duplexer and in figure 24 the duplexer used in communication apparatus.

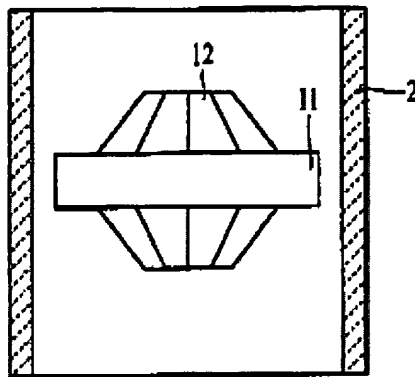


FIG. 12B

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al US Patent 6,433,652.

The above 35 USC 102(b) rejection discusses the Hattori et al reference.

Therefore, Hattori et al is shown to teach all the limitation of the claim with the exception of the protrusion portion being integrally molded with the dielectric resonance element.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have the protrusion portion being integrally molded with the dielectric resonance element, since it has been held that forming in one piece an article which had formerly been formed in two pieces and put together involves only routine skill the art.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morino et al US Patent 5,661,441 in view of Hattori et al US Patent 6,433,652.

Morino et al disclose in figure 1, a dielectric resonator oscillator used in high frequency communication apparatus. The oscillator comprises a shield case, a metal plate, and a dielectric resonator 1.

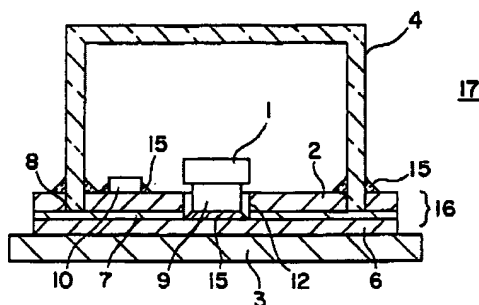


FIG. 1

Thus, Morino et al is shown to teach all the limitation of the claims with the exception of the dielectric resonator comprising a dielectric resonance element; and

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protrusion portion disposed on a bottom surface of the dielectric resonance element, wherein a side face an outer periphery of the protrusion portion is tilted such that an area of an upper surface of the protrusion portion adjacent the bottom surface of the dielectric resonance element is larger than area of a lower surface of the protrusion portion, and. wherein an electromagnetic field used in the dielectric resonance element is in the TE₀₁ mode.

Hattori et al disclose in figures 12A and 12B a multimode dielectric resonator apparatus used in a filter, a duplexer and a communication apparatus. The dielectric resonator comprises a TM dielectric core portion 11; and TE mode dielectric core portion 12 that protrudes from the top and bottom surface of the TM mode dielectric core portion 11. The side face at an outer periphery of the TE mode dielectric core portion is tilted such that an area of an upper surface of the TE mode dielectric core portion adjacent the bottom surface of the TM mode dielectric core portion is larger than an area of a lower surface of the TE mode dielectric core.

It would have been obvious to one having ordinary skill in the art to substitute the general dielectric resonator of Morino et al with the multimode dielectric resonator as taught by Hattori et al. The motivation for this modification would have been to provide a dielectric resonator that allows TE modes and TM modes to be securely coupled to each other without increasing the resonant frequencies (column 2; lines 1-6)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mayer US Patent 6,717,490 discloses a dielectrical microwave filter comprising a dielectric resonator having a taper pedestal.

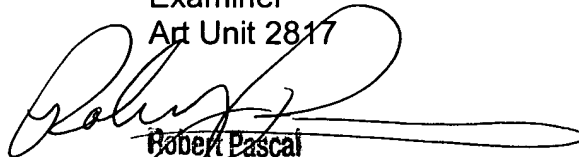
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E. Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Kimberly E Glenn
Examiner
Art Unit 2817


Robert Pascal
Supervisory Patent Examiner
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